

AUG. 30. 2006 12:23PM

HP LEGAL

RECEIVED  
CENTRAL FAX CENTER

NO. 2494 P. 8

AUG 30 2006

Application No. 10/660,297  
Responsive to the Office Action of May 30, 2006

page 7  
August 28, 2006

**REMARKS**

The amendments to the claims are described below in the **PRESENT AMENDMENT**. The status of the claims is as follows:

- a. **Claims 1-24 are Pending** in the present application.
- b. Independent **Claims 1 and 13** have been amended to include the limitations recited in **Claims 11 and 20** respectively.
- c. **Claims 1-24 are rejected**.

i. **PRESENT AMENDMENT**

Independent **Claims 1 and 13** were amended to distinctly point out and particularly claim the subject matter the Applicant regards as his Invention. Specifically, those claims now recite "...wherein a first capacitance is formed on a first side of the suspension mechanism and a second capacitance is formed on a second side of the suspension mechanism..". Support for the amendments to **Claims 1, 17 and 19** can at least be found in the **Claims** and the **Detailed Description**.

No new matter was introduced by amending the application.

Application No. 10/660,297  
Responsive to the Office Action of May 30, 2006

page 8  
August 28, 2006

ii. **ARGUMENT**

a. **Rejections of Claims 13-22 under 35 U.S.C. §101**

For ease of review, Applicant reproduces independent claim 13 herein below:

13. A method of reading data from a data storage device comprising:
- suspending a probe tip over a data storage layer via a suspension mechanism;
  - providing at least one conducting layer wherein a capacitance is formed between the suspension mechanism and the at least one conducting layer; and
  - reading data from the storage device by sensing a change in the capacitance based on a displacement of the probe tip due to the presence of a bit.

Applicant asserts that 35 U.S.C. §101 describes a situation in which claims may be rendered unpatentable based upon the notion that the invention as a whole must accomplish a practical application. Applicant respectfully asserts that independent claim 13 has been amended to recite the limitation "...reading data from the storage device by sensing a change in the capacitance ...". Consequently, Applicant respectfully disagrees with the Examiner's rejection under 35 U.S.C. §101.

Based on varying embodiments of the present invention, a data storage device and a method of reading data in a data storage device are disclosed. The device includes a probe tip suspended over a storage medium via a suspension mechanism. Accordingly, as the probe tip is scanned over the storage medium, a gap between the tip and the underlying storage medium varies as the tip encounters topographic bits in the storage medium. As the gap between the tip and the underlying storage medium changes, the capacitance between the probe tip/suspension and other components of

Application No. 10/660,297  
Responsive to the Office Action of May 30, 2006

page 9  
August 28, 2006

the device varies. Accordingly, a readout scheme can be implemented whereby the capacitance between the probe tip/suspension and other components is monitored in order to read data in the data storage device. Applicant accordingly asserts that the Examiner's rejection under 35 U.S.C. §101 is no longer applicable.

**b. Rejections of Claims 1-10, 13-19 under 35 U.S.C. §102**

Section 102(e) describes a situation in which claims may be rendered unpatentable based upon another's U.S. patent, published U.S. patent application, or PCT patent application published in English. It states that if someone else described the invention in such an application or patent filed before the appellant's invention, then rejection of the appellant's claim to it is proper. Essentially, section 102(e) covers the situation where the application or patent does not specifically claim the invention but does fully disclose the invention.

The Applicant respectfully traverses the rejections because all of the elements of independent **Claims 1 and 13** as amended herein are not anticipated by U.S. Patent application number **2003/0202456** to *Hong et al.* Specifically, *Hong et al.* does not teach or suggest the limitation "...wherein a first capacitance is formed on a first side of the suspension mechanism and a second capacitance is formed on a second side of the suspension mechanism..". *Hong et al.* discloses an apparatus and a method for reproducing data using capacitance. The apparatus includes a tip, a cantilever, a positioning portion, a power supply, an electrostatic force measuring portion, and a controller. The tip contacts a recording medium on which data is recorded by a bit. The cantilever is made of conductive material and has a free end for supporting the tip. The positioning portion moves the cantilever so as to determine a position of the tip on the recording medium.

Application No. 10/660,297  
Responsive to the Office Action of May 30, 2006

page 10  
August 28, 2006

Applicant asserts that *Hong et al.* does not teach or suggest the limitation "...wherein a first capacitance is formed on a first side of the suspension mechanism and a second capacitance is formed on a second side of the suspension mechanism..". The Examiner stipulates this observation as well in the May 30, 2006 office action. Consequently, since *Hong et al.* does not teach or suggest the limitation "...wherein a first capacitance is formed on a first side of the suspension mechanism and a second capacitance is formed on a second side of the suspension mechanism.." as recited in amended independent claims 1 and 13, *Hong et al.* does not teach or suggest all of the claim limitations of the independent claims 1 and 13. Accordingly, independent claims 1 and 13 are allowable over the *Hong et al.* reference.

**Claims 2 – 10 and Claims 14-19** respectively depend from independent **Claims 1 and 13** and inherit all of their limitations. Therefore, **Claims Claims 2 – 10 and Claims 14-19** are patentably distinct in view of *Nickel* and the rejections of **Claims 2 – 10 and Claims 14-19** under 35 U.S.C. §102(e) ought to now be withdrawn.

c. **Rejections of Claims 11-12, 20 under 35 U.S.C. §103**

The Examiner asserts that the present invention is obvious based on *Hong et al.* in view of *Min et al.* *Min et al.* discloses a data storage apparatus adopting a time division multiplexing technique, and a data recording method and a data reproduction method both using the apparatus, are provided. In the data storage apparatus, a recording medium stores data, and a stage supports the recording medium. A scanner drives the stage, and a cantilever array composed of a plurality of cantilevers record data to and reproducing data from the recording medium in a data detecting sequence.

Application No. 10/660,297  
Responsive to the Office Action of May 30, 2006

page 11  
August 28, 2006

A controller detects data by applying a scanner driving signal to the scanner and applying a voltage signal for data recording or a voltage modulation signal for data reproduction to the plurality of cantilevers.

As previously stated, *Hong et al.* discloses an apparatus and a method for reproducing data using capacitance. The apparatus includes a tip, a cantilever, a positioning portion, a power supply, an electrostatic force measuring portion, and a controller. The tip contacts a recording medium on which data is recorded by a bit. The cantilever is made of conductive material and has a free end for supporting the tip. The positioning portion moves the cantilever so as to determine a position of the tip on the recording medium.

The Examiner concedes that *Hong et al.* does not expressly disclose the limitation of "...wherein a first capacitance is formed on a first side of the suspension mechanism and a second capacitance is formed on a second side of the suspension mechanism..." as recited in amended independent claims 1 and 13. The Examiner then asserts that *Min et al.* discloses forming a capacitance on both sides of the cantilever. Accordingly, since *Hong et al.* and *Min et al.* are analogous art, it would have been obvious to one skilled in the art at the time of the invention to combine *Hong et al.* with *Min et al.* to arrive at the Applicant's recited invention of claims 1 and 13. Applicant respectfully disagrees.

When making an obvious rejection under 35 U.S.C. § 103, a necessary condition is that the combination of the cited references must teach or suggest all claim limitations. If the cited references do not teach or suggest every element of the claimed invention, then the cited references fail to render obvious the claimed invention, i.e. the claimed invention is distinguishable over the combination of the cited references.

Application No. 10/660,297  
Responsive to the Office Action of May 30, 2006

page 12  
August 28, 2006

Additionally, for reference structures to be properly combined and thereby render a claimed invention obvious, there must be some motivation for the combination i.e. there must be some teaching, suggestion, or incentive to make the combination claimed by the appellant. *Northern Telecom, Inc. v. Datapoint Corp.* 15 USPQ2d 1321, 1323 (CAFC 1990). **Motivation coming from the applicant's own disclosure is not sufficient.** Nor is it sufficient that those of ordinary skill in the art had the capability to combine the referenced structure or understood the advantages of the combination. Although an Examiner may suggest that the structure of a primary prior art reference *could* be modified in view of a secondary prior art reference to form the claimed structure, the mere fact that the prior art *could* be so modified does not make the modification obvious **unless the prior art suggested the desirability of the modification.** *In re Newell*, 891 F.2d 899, 13 USPQ2d 1248 (CAFC 1989). (Emphasis added.) Applicant accordingly disagrees with the Examiner's assessment.

Although *Min et al.* discloses forming a capacitance on a cantilever, *Min et al.* does not disclose "...wherein a first capacitance is formed on a first side of the suspension mechanism and a second capacitance is formed on a second side of the suspension mechanism..." as recited in amended independent claims 1 and 13. Figure 2A of *Min et al.* shows the formation of two capacitances, however the capacitances are formed on the *same side* of the cantilever (See *Min et al.* page 1, paragraph 11, Fig. 2A) not on a first side and a second side. Consequently, Applicant asserts that the *Min et al.* reference does not teach or suggest the limitation "...wherein a first capacitance is formed on a first side of the suspension mechanism and a second capacitance is formed on a second side of the suspension mechanism..." as recited in amended independent claims 1 and 13.

Application No. 10/660,297  
Responsive to the Office Action of May 30, 2006

page 13  
August 28, 2006

Applicant therefore asserts that since the *Min et al.* reference does not teach or suggest the limitation "...wherein a first capacitance is formed on a first side of the suspension mechanism and a second capacitance is formed on a second side of the suspension mechanism..." as recited in amended independent claims 1 and 13, the Examiner's proposed combination of *Hong et al.* in view of *Min et al.* does not teach or suggest a data storage device "...wherein a first capacitance is formed on a first side of the suspension mechanism and a second capacitance is formed on a second side of the suspension mechanism..." as recited in amended independent claims 1 and 13. Consequently, since the Examiner's proposed combination of *Hong et al.* in view *Min et al.* reference does not teach or suggest the limitation "...wherein a first capacitance is formed on a first side of the suspension mechanism and a second capacitance is formed on a second side of the suspension mechanism..." as recited in amended independent claims 1 and 13, independent claims 1 and 13 are not obvious in view of the Examiner's proposed combination of references.

**Claim 12** and **Claim 20** respectively depend from independent **Claims 1 and 13** and inherit all of their limitations. Therefore, **Claim 12** and **Claim 20** are patentably distinct in view of *Nickel* and the rejections of **Claim 12** and **Claim 20** under 35 U.S.C. §103 ought to now be withdrawn.

Application No. 10/660,297  
Responsive to the Office Action of May 30, 2006

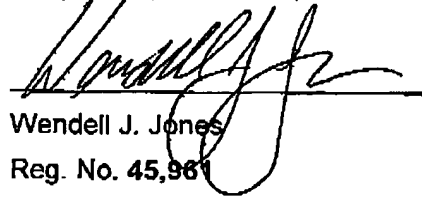
page 14  
August 28, 2006

iii. CONCLUSION

Applicant believes that this application is in condition for allowance.

Accordingly, Applicant respectfully requests reconsideration, allowance and passage to issue of the claims as now presented. Should any unresolved issues remain, Examiner is invited to call Applicant's attorney at the telephone number indicated below.

Respectfully submitted,



Wendell J. Jones  
Reg. No. 45,961